Table H.10. Summary of Impacts of Shipping Hanford Only Wastes for Each Alternative Group[a]

Waste Type	Radiological Impacts, LCFs			Non-Radiological Impacts		
	Occupational	Non-Occupational	Radiological Accidents	Number of Accidents	Accident Fatalities	Emissions, LCFs
Alternative Groups A, C, D, and E[b]						
LLW	2.9E-2	2.5E-2	1.9E-2	1.9E-1	2.0E-2	1.6E-1
MLLW	4.1E-1	1.1E-1	3.4E-3	2.0E+1	4.9E-1	1.7E-1
TRU Waste	8.0E-3	6.9E-3	4.1E-3	5.0E-2	5.5E-3	4.3E-2
ILAW	5.8E-3	1.9E-4	3.7E-11	3.5E-2	3.8E-3	3.0E-3
Total	**0** (4.5E-1)	**0** (1.5E-1)	**0** (2.7E-2)	**20** (2.0E+1)	**1** (5.2E-1)	**0** (3.8E-1)
Alternative Group B[b]						
LLW	2.9E-2	2.5E-2	1.9E-2	1.9E-1	2.0E-2	1.6E-1
MLLW	2.5E-2	2.3E-2	3.6E-3	5.1E-1	2.0E-2	7.5E-2
TRU Waste	8.0E-3	6.9E-3	4.1E-3	5.0E-2	5.5E-3	4.3E-2
ILAW	5.8E-3	1.9E-4	3.7E-11	3.5E-2	3.8E-3	3.0E-3
Total	**0** (6.9E-2)	**0** (5.6E-2)	**0** (2.7E-2)	**1** (7.8E-1)	**0** (4.9E-2)	**0** (2.8E-1)
No Action Alternative						
LLW	2.9E-2	2.5E-2	1.9E-2	1.8E-1	2.0E-2	1.6E-1
MLLW	3.7E-2	1.5E-2	3.8E-4	9.6E-1	2.9E-2	6.5E-2
TRU Waste	8.6E-3	8.1E-3	4.9E-3	5.1E-2	5.6E-3	4.5E-2
Total[c]	**0** (7.5E-2)	**0** (4.7E-2)	**0** (2.4E-2)	**1** (1.2E+0)	**0** (5.5E-2)	**0** (2.7E-1)

Note: Public includes non-involved workers.

(a) Radiological impacts (incident-free and accident) are expressed in units of LCFs. Non-radiological accident impacts are expressed as the expected number of accidents and the resulting physical trauma fatalities. Non-radiological emissions impacts are expressed as LCFs.

(b) The impacts in these areas are for the Hanford Only waste volume case. Impacts are included for shipments of MLLW to offsite treatment facilities and back. The impacts in Washington and Oregon from offsite shipments are presented in Table 5.16.

(c) No transportation impacts are included for transfer of ILAW cullet between the WTP and the adjacent grout vault used for ILAW disposal because of their close proximity.

offsite shipments of MLLW to the ORR for treatment and then return of the treated waste to Hanford). Even so, the differences in impacts among the alternatives are small.

H.3 Impacts of Transporting Construction and Capping Materials

This section evaluates the impacts of transporting materials required to construct new facilities, such as new disposal trenches and treatment facilities, as well as materials required to cap the disposal facilities after they are filled with waste. The quantities of these materials, which include concrete, asphalt, basalt, and concrete, are compiled for each alternative in Section 5.10. This section evaluates the impacts of

transporting these materials from their points of origin to the appropriate Hanford Site facility. Note that only the non-radiological impacts of transportation accidents are evaluated. No radiological impacts would occur (Rao et al. 1982).

The non-radiological accident impacts of transporting construction materials were calculated by first determining the numbers of shipments of each material. This calculation was done by dividing the total material requirements by the capacity of a typical shipment. Typically, the shipment capacities are limited to about 40,000 lb (18,140 kg) of cargo to ensure that the shipments are below legal-weight truck limits (80,000 lb [36,290 kg] gross vehicle weight in most states). The next step was to determine the total distance traveled by these shipments or the product of the round-trip shipping distance and the number of shipments. Finally, the projected numbers of fatalities were determined by multiplying the travel distances times the accident and fatality rates for heavy-combination truck shipping. The accident rate used in this analysis was 1.75E-7 accidents per truck-km (2.8E-7 accidents per truck-mile), and the fatality rate was 7.5E-9 fatalities per truck-km (1.2E-8 fatalities per truck-mile). These rates are representative of accident and fatality rates on Washington State primary highways, similar to the highways and roadways to be used for most of the shipments. The rates used in this analysis were taken from Saricks and Tompkins (1999).

Table H.11 presents the input data and results of the impact analysis for the transport of construction and capping materials. The table includes the estimated impacts associated with each Alternative Group and waste-volume case. Although accidents are expected to occur, in no case were any fatalities projected to occur associated with the transport of construction and capping materials.

The results in Table H.11 indicate that there are not large differences in impacts among the Alternative Groups. For the Hanford Only waste-volume cases, the projected fatalities ranged from about 0.06 for Alternative Groups C, D, and E to 0.15 fatalities for the No Action Alternative. The impacts of all Alternative Groups except for the No Action Alternative are dominated by transport of asphalt, gravel/sand, silt/loam, and basalt, and bentonite to use as capping materials. The impacts for the No Action Alternative are dominated by the transport of steel and concrete.

H.4 Impacts on Traffic

The potential for adverse impacts on traffic would be limited to those associated with the transport of construction materials from offsite, which would be predominantly 4- to 6-lane highways south of the Hanford Site; traffic congestion would not be expected. The transport of the majority of capping resources would be onsite as material from Area C would be delivered under State Route (SR) 240 by conveyors to a holding area in Area B on the Hanford Site east of SR 240. For a conservative view, the transportation-impact analysis assumed that all transport of capping material is by truck.

H.5 Offsite Transportation Impacts

This section presents the transportation-impact analysis for shipping LLW and MLLW to Hanford from offsite generators and for shipping TRU Waste to WIPP.